REMARKS

Entry of the above amendments and below remarks, made in response to the office action of January 26, 2005, is respectfully requested. Claims 1-76 are currently pending.

Rejections under 35 U.S.C. §102

Claims 1, 5-13, 17-25, 29-37, 39, 43-46, 48-49, 53-58, 62-67, 69 and 72-74 were rejected under 35 U.S.C. §102(a) as being anticipated by Goguen.

Goguen describes, at column 6, lines 52-56 a system for "...dynamically adjusting a bandwidth of a Multi-protocol Label Switching (MPLS) system traffic engineering (TE) tunnel based on actual traffic flow through the tunnel. Generally, the network devices using the MPLS system keep track of byte counts through the TE tunnel. Knowledge of the actual traffic flow through a tunnel enables dynamic adjustment of the bandwidth, which in turn allows for allocation of sufficient resources to service the traffic. In one instance, excess bandwidth is reallocated elsewhere by the network devices..."

Goguen describes, at column 7, lines 65- column 8 lines 6:

"... An improved MPLS system determines the actual traffic that flows through the configured TE tunnels and dynamically re-configures the tunnel bandwidth to reflect the traffic flow. The TE module 710 notified of the change, initiates a path setup procedure to find a path that is able to accommodate the adjusted bandwidth. If the calculated path is the same as the current path, the setup procedure may terminate and the current path is used with the new adjusted bandwidth. Alternatively, the setup procedure is initiated as described with respect to FIG. 2, where the newly established tunnel that meets the adjusted

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bandwidth and other constraints in the configuration table, replaces the old tunnel and the old tunnel is torn down. The actual traffic may be determined by accessing the byte counters 772 kept within the physical link management module 770..."

Thus Goegun describes a technique which involves reconfiguring links of a tunnel to meet the bandwidth requirements of the traffic that travels through the tunnel. In contrasts, the traffic management of the present invention controls the traffic of the tunnel by controlling *which* data is forwarded through the tunnel. For example, claim 1 recites the steps of "...establishing said tunnel to said tail-end device as one of said number of routes ... determining a number of said destinations that are serviced by said tail-end device to obtain serviced destinations; and ... *selectively routing information* destined for said serviced destinations *through said tunnel responsive to a relationship between a destination address of the serviced destination and the tail-end device...*"

No mention or suggestion of such a feature is described or suggested by Goguen. When describing the decision methods that are used to determine whether to use a tunnel or not, Goguen describes at column 3, lines 8-20:

> "... Once the TE tunnel has been established, the TE module notifys the IGP as to the IP address of the TE tunnel. Once notified, the IGP can route packets through the TE tunnel using the IP address. In instances where the IGP is load balancing between a TE tunnel and a regular path, IGP may use a "flow" method or a "round-robin" method to load balance between the two paths. The flow method is really a load sharing method and may be performed in a following manner: a portion of a source address and a destination address of a packet may be combined and hashed to generate one of a pseudo-random range of numbers. The value of the number determines which path the packet is to follow. Assuming the packet is routed to the TE tunnel, the packet transmission mechanism through the tunnel is based on label switching...."

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In order to support a rejection under 35 U.S.C. §102, *every* limitation in the claims should be shown or suggested by the references. For at least the reason that Goguen fails to teach or describe the steps of "...selectively routing information destined for said serviced destinations through said tunnel responsive to a relationship between a destination address of the serviced destination and the tail-end device...", it is respectfully submitted that the rejection is improper and should be withdrawn. Applicants note that independent claims 13, 25, 39, 49, 58 and 69 have been amended to also more clearly recite the limitation of 'selectively routing' information responsive to a relationship between the destination address of the information to be routed and the tunnel tail-end device. For at least the reason as well that Goguen fails to teach this limitation, Applicant's submit that all the independent claims and their corresponding dependent are patentably distinct over Goguen.

Rejections under 35 U.S.C. §103

Claims 2, 14, 26, 40, 50, 59 and 70:

Claims 2, 14, 26, 40, 50, 59 and 70 were rejected under 35 U.S.C. §103(a) as being unpatentable over Goguen in view of Chuah (6,519,254). Goguen has been discussed above.

Chuah:

Chuah describes, in the Abstract:

"...A new RSVP-based tunnel protocol establishes packet tunnels between a tunnel source point (TSP) and a tunnel destination point (TDP) such that guaranteed services to aggregated packet flows is provided. In particular, an end-to-end RSVP session is mapped using a receiver-oriented RSVP type of signaling such that the TDP determines tunnel mapping. As such, this new RSVP-type of protocol is compatible with the

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receiver-driven nature of RSVP. Subsequent to admitting RSVP sessions, a tunnel tuning procedure dynamically adapts existing RSVP tunnels to traffic conditions in order to improve bandwidth efficiency. This tunnel tuning procedure may result in RSVP tunnel re-assignment of some of the admitted end-to-end sessions..."

The Examiner states, at page 8 of the office action "... wherein said serviced destinations comprise directly connected hosts/subnets of said tail-end device is missing from Goguen. However, Chuah discloses in figure 3, a tail end device (element 25) that is an ISP, which is directly connected to the destinations it services. It would have been obvious to one skilled in the art at the time of the invention to service destinations directly connected to the end of the tunnel. The motivation would be to use the tunnel as the fastest route to a group of destinations connected to the end of the tunnel..."

Combination neither describes nor suggests the claimed invention

Chuah is directed in particular to a modifying and usage of the RSVP protocol, in particular to dynamically reconfigure and tune tunnels to improve bandwidth efficiency (Chuah col. 2, lines 27-32). Chuah states "The tunnel tuning procedure may result in tunnel re-assignment of some of the admitted end-to-end RSVP sessions..." In particular, the embodiments of Chuah are directed at using tunnels to ensure that the RSVP protocols are satisfied. As in Goguen, tunnels are adapted to support traffic bandwidth. In contrast, the claimed invention controls the amount of traffic that is allowed *into* the tunnel, rather than modifying the tunnel to support the traffic, by "... *selectively routing information* destined for said serviced destinations *through said tunnel responsive to a relationship between a destination address of the serviced destination and the tail-end device...*" No such feature is shown or suggested in the combination of references provided by the Examiner. With regard, in particular to claim 2, Applicants

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note that the claims of the present invention do not merely recite that the tunnel services

destinations directly connected to its end, but that it is used to connect *only* those

destinations that are directly coupled hosts/subnets. Such a limitation is not shown or

suggested in the art. Dependent claims 14, 26, 40, 50, 59 and 70 are patentable for much

the same reason, and it is respectfully requested that the rejection under 35 U.S.C. §103

of claims 2,1,26, 40, 50, 59 and 70 be withdrawn.

Claims 3, 4, 15, 16, 27, 28, 41, 42, 51, 52, 60, 61 and 71

Claims 3, 4, 15, 16, 27, 28, 41, 42, 51, 52, 60, 61 and 71 were rejected under 35

U.S.C. §103(a) as being unpatentable over Goguen in view of Chuah (U.S. 6,496,491).

Chuah describes, in the abstract, an "apparatus for transferring packet data

incorporates a "hand-off" feature that allows the transfer of an existing PPP connection

from one packet server to another packet server. Such a hand-off control message or call

continue transaction can be initiated by any of the servers involved in the transactions..."

The Examiner states, at page 9 of the Office Action "... Chuah ... discloses...

tunnels that can increase or decrease their number of hops based on congestion in the

tunnel..."

Applicants note that the present invention is not directed at tunnels which can

'increase or decrease their number of hops...' A careful reading of the dependent claims

together with the independent claims shows that only information for 'serviced

destinations' is forwarded through tunnels, and claim 3 recites that the devices which are

included in the 'serviced destinations' category are those devices that are within a

predetermined number of hops from the tail end of the router. Thus, destinations which

are *not* within a predetermined number of hops from the tail-end of the tunnel will not be

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forwarded through the tunnel. No such arrangement for controlling the traffic that goes into the tunnel is described in Goguen, Chuah or the combination thereof. For at least this reason, claims 3, 4, 15, 16, 27, 28, 41, 42, 51, 52, 60, 61 and 71 are patentably distinct over the combination of Goguen and Chuah, and the rejection should be withdrawn.

Claims 38 and 68:

Claims 38 and 68 were rejected under 35 U.S.C. §103(a) as being unpatentable over Goguen in view of Goebel. The Examiner relies on Goebel as supporting the limitation of a computer program being embodied as a data signal. Goebel describes a method of allocating registers when compiling code. Although Applicants disagree that the combination is a proper one, given the disparate nature of the references, Applicants note that the combination of Goebel with Goguen fails to overcome any of the inadequacies pointed out above with regard to Goguen. For at least the reason that the combination of references fail to teach or describe the limitations of the parent independent claims, claims 38 and 68 are patentable over the references, and the rejection should be withdrawn.

Claims 47 and 75:

Claims 47 and 75 were rejected under 35 U.S.C. §103(a) as being unpatentable over Goguen in view of Swallow. The Examiner relies on Swallow as supporting the limitation of removing the label from the information and forwarding said information to said destinations based upon destination address information. Swallow describes, in the abstract, "...a network communications tunnel is established by assigning a unique label to each communications link between adjacent nodes in a pre-defined network path. A

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node's unique label is used to forward a data packet to the adjacent node in the pre-defined path. The unique labels for all the nodes in the pre-defined path are stored by each node in the tunnel..." As noted above, Applicants note that the combination of Goebel with Swallow fails to overcome any of the inadequacies pointed out above with regard to Goguen, namely Swallow neither describes nor suggests selective tunneling based on a relationship between the address of the destination and the tail-end of the tunnel. For at least the reason that the combination of references fail to teach or describe the limitations of the parent independent claims, claims 47 and 75 are patentable over the references, and the rejection should be withdrawn.

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Conclusion

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Lindsay McGuinness, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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Date

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